detector (Bashir at col. 25, lines 1–15). None of these types of detectors include a detector used in detecting an applied load such as Q discussed in Valadier applied to one end of the dynamometer. Moreover, there is no teaching in Bashir that would indicate using the dynamometer would allow for the detection of the viability of biological cells with a substrate. This alone makes the combination of Bashir and Valadier improper. However, the combination of Bashir and Valader still fail to teach or suggest the claims, as discussed below.

The Office Action concedes that Bashir fails to disclose "a supporting portion and a pair of arms connected via elastic hinges to the supporting portion, a functional membrane connected to the arms, a force sensor connected to one of the arms and an actuator that provides tension to the functional membrane and that is connected to the other arm" (Office Action at page 2). The Office Action alleges that the combination of Bashir with Valadier cures the above-note deficiencies. Applicants respectfully traverse this assertion.

The Office Action alleges that the bending beam 10 is equivalent to Applicants' claimed "functional membrane" (Office Action at page 3). However, Valadier discloses that the bending beam 10 is in the shape of a truncated cone of a tapered cross-section (Valadier at col. 3, lines 31–39). The beam 10 is produced from a material having elastic properties, preferably from an anodizable light alloy (Valadier at col. 3, lines 50–52). Because the beam 10 is made from a anodizable light alloy and in the shape of a truncated cone, a skilled artisan would not interpret the beam as being a "functional membrane" as recited in the claims and described in the specification as "functional polymer or a protein" (Specification at paragraph [0004]). Moreover, the chemistry definition of "membrane" according to the *American Heritage College Dictionary* is "a thin sheet of natural or synthetic material that is permeable to substances in solution" (emphasis added). A skilled artisan would not interpret a piece of light alloy in the shape of a truncated cone as matching the definition of membrane.

Accordingly, the bending beam 10 of Valadier does not teach or suggest a "functional membrane" as recited in the claims. Therefore, the combination of Bashir with Valadier fails to teach or suggest a "functional membrane" as recited in the claims.

Valadier also fails to teach or suggest "an actuator for providing tension to the functional membrane, the actuator being connected to the other of the arms," as recited in claim 1. The Office Action merely alleges that Valadier discloses a "tension applier" without specifically referring to which portion of the apparatus in Valadier is a tension applier. Instead, the Office Action merely cites to column 8, lines 23–29 and 40–44, column 1, lines 28–32, column 3, lines 58–61, and column 4, lines 57–61. However, these portions of Valadier fail to teach or suggest a tension supplier.

Valadier discloses rows of windings 34 and 36 that are tensioned strands 34 and 36 designated by the letter T in Fig. 3. Although Valadier discloses that the rows of windings 34 and 36 are tensioned, the rows of windings fail to teach or suggest "an actuator for providing tension to the function membrane," in as much as Valadier fails to teach or suggest a functional membrane, as well as for the rows of windings 34 and 36 failing to teach or suggest structure that provides tension. Accordingly, Valadier fails to teach or suggest "an actuator for providing tension to the functional membrane, the actuator being connected to the other of the arms," as recited in claim 1. Therefore, the combination of Bashir with Valadier fails to teach or suggest a "functional membrane" as recited in the claims.

Based on the above, Bashir in view of Valadier fail to teach or suggest independent claim 1. Therefore, independent claim 1 is patentable over the references. Claims 2 and 4–15 are also patentable, at least in view of the patentability of claim 1, from which they depend, as well as for the additional features the claims recite. Therefore, Applicants respectfully request withdrawal of the rejection.

The Office Action rejects claim 3 under 35 U.S.C. §103(a) over Bashir in view of Valadier in further view of *An Artificial Nose Based on a Micromechanical Cantilever Array* (Lang). Applicants respectfully traverse the rejection.

This rejection is premised upon the presumption that Bashir in view of Valaider teach or suggest all of the features of claim 1. Because, as discussed above, Bashir in view of Valaider do not teach or suggest all of the features of claim 1, the rejection is improper. Applicants respectfully request withdrawal of the rejection.

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of the claims are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,

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JAO:KRG/jnm

Attachment:
Petition for Extension of Time

Date: January 21, 2009

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